

**Manchester Environmental Laboratory**

7411 Beach Drive E, Port Orchard Washington 98366

**CASE NARRATIVE**

January 29, 1999

Project: **Hamilton/Labree**  
Samples: 99048005  
Project ID: 109699  
Project Officer: Pam Marti  
By: Karin Feddersen K

**VOLATILE ORGANIC ANALYSIS****SUMMARY:**

The data is usable as reported.

**ANALYTICAL METHODS:**

Volatile organic compounds were analyzed using the Manchester Laboratory modification of the EPA Method 8260 purge-trap procedure and capillary Gas Chromatography with Mass Spectrometer (GC/MS) analysis. Routine QA/QC procedures were performed.

**BLANKS:**

No analytes of interest were detected above the reporting limit in the blank.

**SURROGATES:**

Surrogate recoveries were within acceptable limits for all samples.

**HOLDING TIMES:**

The samples were analyzed within the recommended 14 day holding time.

**MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:**

Insufficient sample was provided for matrix spikes. At least three *extra* vials are required to perform matrix spikes.



## DATA QUALIFIER CODES:

- U - The analyte was not detected at or above the reported value.
- J - The analyte was positively identified. The associated numerical value is an estimate.
- UJ - The analyte was not detected at or above the reported estimated result.
- REJ - The data are unusable for all purposes.
- NAF - Not analyzed for.
- N - There is evidence the analyte is present in the sample.
- NJ - There is evidence that the analyte is present. The associated numerical result is an estimate.
- E - This qualifier is used when the concentration of the associated value exceeds the known calibration range. The associated numerical result is an estimate.
- bold** - The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.)

# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for Volatile Organic Analysis

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8260

Field ID: HL-5

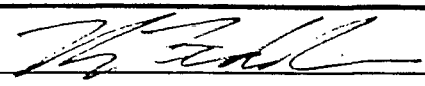
Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/29/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	20	U	Tetrachloroethene	7.1	
Chloromethane	5	U	Dibromochloromethane	2	U
Vinyl Chloride	1	U	1,2-Dibromoethane (EDB)	1	U
Bromomethane	1	U	Chlorobenzene	1	U
Chloroethane	5	U	1,1,1,2-Tetrachloroethane	2	U
Trichlorofluoromethane	1	U	Ethylbenzene	5	U
Ethyl Ether	1	U	m & p-Xylene	2	U
1,1,2 Trichlorotrifluoroethane	1	U	o-Xylene	1	U
1,1-Dichloroethene	5	U	Styrene	2	U
Acetone	2	U	Bromoform	2	U
Methyl Iodide	1	U	Isopropylbenzene (Cumene)	1	U
Carbon Disulfide	2	U	1,1,2,2-Tetrachloroethane	1	U
Methylene Chloride	1	U	Trans-1,4-Dichloro-2-butene	5	U
2-Methoxy-2-Methylpropane	2	U	1,2,3-Trichloropropane	2	U
Trans-1,2-Dichloroethene	1	U	Bromobenzene	1	U
1,1-Dichloroethane	1	U	n-Propylbenzene	1	U
2-Butanone	5	U	2-Chlorotoluene	2	U
Cis-1,2-Dichloroethene	1	U	1,3,5-Trimethylbenzene	2	U
2,2-Dichloropropane	2	U	4-Chlorotoluene	2	U
Bromochloromethane	1	U	Tert-Butylbenzene	2	U
Chloroform	1	U	1,2,4-Trimethylbenzene	2	U
Tetrahydrofuran	2	U	Pentachloroethane	1	U
1,1,1-Trichloroethane	1	U	Sec-Butylbenzene	1	U
1,1-Dichloropropene	10	U	p-Isopropyltoluene	2	U
Carbon Tetrachloride	1	U	1,3-Dichlorobenzene	2	U
1,2-Dichloroethane	1	U	1,4-Dichlorobenzene	1	U
Benzene	5	U	n-Butylbenzene	5	U
Trichloroethene	1	U	1,2-Dichlorobenzene	1	U
1,2-Dichloropropane	5	U	Hexachloroethane	5	U
Dibromomethane	5	U	1,2-Dibromo-3-Chloropropane	5	U
Bromodichloromethane	2	U	1,2,4-Trichlorobenzene	5	U
Cis-1,3-Dichloropropene	2.1	U	Hexachlorobutadiene	2	U
4-Methyl-2-Pentanone	2	U	Naphthalene	5	U
Toluene	1	U	1,2,3-Trichlorobenzene	5	U
Trans-1,3-Dichloropropene	1.9	U			
1,1,2-Trichloroethane	2	U			
1,3-Dichloropropane	2	U			
2-Hexanone	10	U			

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Volatile Organic Analysis

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8260

Field ID: HL-5

Matrix: Water

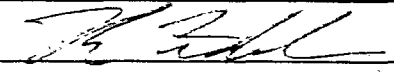
Project Officer: Pam Marti

Date Analyzed: 01/29/99

Units: ug/L

#### Surrogate Recoveries

1,2-Dichloroethane-D4	102	%
1,4-Difluorobenzene	112	%
Toluene-D8	110	%
p-Bromofluorobenzene	97	%
1,2-Dichlorobenzene-D4	104	%

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for Volatile Organic Analysis

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: ODBW9029

Method: SW8260

QC Type: Laboratory Method Blank

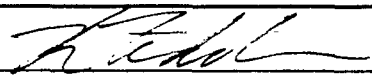
Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/29/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	20	U	Tetrachloroethene	1	U
Chloromethane	5	U	Dibromochloromethane	2	U
Vinyl Chloride	1	U	1,2-Dibromoethane (EDB)	1	U
Bromomethane	1	U	Chlorobenzene	1	U
Chloroethane	5	U	1,1,1,2-Tetrachloroethane	2	U
Trichlorofluoromethane	1	U	Ethylbenzene	5	U
Ethyl Ether	1	U	m & p-Xylene	2	U
1,1,2 Trichlorotrifluoroethane	1	U	o-Xylene	1	U
1,1-Dichloroethene	5	U	Styrene	2	U
Acetone	2	U	Bromoform	2	U
Methyl Iodide	1	U	Isopropylbenzene (Cumene)	1	U
Carbon Disulfide	2	U	1,1,2,2-Tetrachloroethane	1	U
Methylene Chloride	1	U	Trans-1,4-Dichloro-2-butene	5	U
2-Methoxy-2-Methylpropane	2	U	1,2,3-Trichloropropane	2	U
Trans-1,2-Dichloroethene	1	U	Bromobenzene	1	U
1,1-Dichloroethane	1	U	n-Propylbenzene	1	U
2-Butanone	5	U	2-Chlorotoluene	2	U
Cis-1,2-Dichloroethene	1	U	1,3,5-Trimethylbenzene	2	U
2,2-Dichloropropane	2	U	4-Chlorotoluene	2	U
Bromochloromethane	1	U	Tert-Butylbenzene	2	U
Chloroform	1	U	1,2,4-Trimethylbenzene	2	U
Tetrahydrofuran	2	U	Pentachloroethane	1	U
1,1,1-Trichloroethane	1	U	Sec-Butylbenzene	1	U
1,1-Dichloropropene	10	U	p-Isopropyltoluene	2	U
Carbon Tetrachloride	1	U	1,3-Dichlorobenzene	2	U
1,2-Dichloroethane	1	U	1,4-Dichlorobenzene	1	U
Benzene	5	U	n-Butylbenzene	5	U
Trichloroethene	1	U	1,2-Dichlorobenzene	1	U
1,2-Dichloropropane	5	U	Hexachloroethane	5	U
Dibromomethane	5	U	1,2-Dibromo-3-Chloropropane	5	U
Bromodichloromethane	2	U	1,2,4-Trichlorobenzene	5	U
Cis-1,3-Dichloropropene	2.1	U	Hexachlorobutadiene	2	U
4-Methyl-2-Pentanone	2	U	Naphthalene	5	U
Toluene	1	U	1,2,3-Trichlorobenzene	5	U
Trans-1,3-Dichloropropene	1.9	U			
1,1,2-Trichloroethane	2	U			
1,3-Dichloropropane	2	U			
2-Hexanone	10	U			

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: ODBW9029

Method: SW8260

QC Type: Laboratory Method Blank

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/29/99

Units: ug/L

## Surrogate Recoveries

1,2-Dichloroethane-D4	99	%
1,4-Difluorobenzene	110	%
Toluene-D8	106	%
p-Bromofluorobenzene	90	%
1,2-Dichlorobenzene-D4	105	%

Authorized By: 

Release Date: 2/5/99

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**MANCHESTER ENVIRONMENTAL LABORATORY**  
7411 Beach Drive E , Port Orchard Washington 98366

**February 5, 1999**

Subject: **Hamilton Labree**  
Samples: 99048005  
Project ID: 109699  
Project Officer: Pam Marti  
By: Karin Feddersen ✓

***SEMIVOLATILE ORGANICS***

**ANALYTICAL METHODS:**

The samples were extracted following the EPA CLP and SW-846 8270 procedure. The extracts were cleaned up with Gel Permeation Chromatography (GPC). Analysis was by capillary gas chromatography with mass spectrometry (GC/MS). Routine QA/QC procedures were performed with the analyses.

**HOLDING TIMES:**

The samples were stored at 4 degrees C until extraction. They were extracted and analyzed within the recommended holding times.

**BLANKS:**

Low levels of some analytes were detected in the laboratory blanks. An analyte is considered native to the sample when the on-column concentration is at least five times greater than in the associated method blanks. A phthalate is considered native to the sample when the concentration is at least ten times greater than in the associated method blanks.

**SURROGATES:**

The standard Manchester Laboratory Base/Neutral/Acid (BNA) surrogates were added to the sample prior to extraction. All surrogate recoveries were within acceptable limits.

**MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:**

Insufficient sample was provided for spikes.

**COMMENTS:**

The data is acceptable for use as reported.

## DATA QUALIFIER CODES:

- U - The analyte was not detected at or above the reported value.
- J - The analyte was positively identified. The associated numerical value is an estimate.
- UJ - The analyte was not detected at or above the reported estimated result.
- REJ - The data are unusable for all purposes.
- NAF - Not analyzed for.
- N - There is evidence the analyte is present in the sample.
- NJ - There is evidence that the analyte is present. The associated numerical result is an estimate.
- E - This qualifier is used when the concentration of the associated value exceeds the known calibration range. The associated numerical result is an estimate.
- bold** - The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.)



# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8270

Field ID: HL-5

Date Prepared: 01/27/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/27/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
N-Nitrosodimethylamine	.25	U	Acenaphthene	.12	U
Pyridine	.12	U	2,4-Dinitrophenol	2.5	U
Aniline	.12	U	4-Nitrophenol	.12	U
Phenol	.12	U	Dibenzofuran	.12	U
Bis(2-Chloroethyl)Ether	.12	U	2,4-Dinitrotoluene	.12	U
2-Chlorophenol	.12	U	Diethylphthalate	.12	U
1,3-Dichlorobenzene	.12	U	Fluorene	.12	U
1,4-Dichlorobenzene	.12	U	4-Chlorophenyl-Phenylether	.12	U
1,2-Dichlorobenzene	.12	U	4-Nitroaniline	.12	U
Benzyl Alcohol	.12	U	4,6-Dinitro-2-Methylphenol	1.2	U
2-Methylphenol	.12	U	N-Nitrosodiphenylamine	.12	U
2,2'-Oxybis[1-chloropropane]	.12	U	1,2-Diphenylhydrazine	.12	U
N-Nitroso-Di-N-Propylamine	.12	U	4-Bromophenyl-Phenylether	.12	U
4-Methylphenol	.12	U	Hexachlorobenzene	.12	U
Hexachloroethane	.12	U	Pentachlorophenol	.25	U
Nitrobenzene	.12	U	Phenanthrene	.12	U
Isophorone	.12	U	Anthracene	.12	U
2-Nitrophenol	.12	U	Caffeine	.12	U
2,4-Dimethylphenol	.12	U	Carbazole	.12	U
Bis(2-Chloroethoxy)Methane	.12	U	Di-N-Butylphthalate	.12	U
Benzoic Acid		REJ	Fluoranthene	.12	U
2,4-Dichlorophenol	.12	U	Benzidine	.25	U
1,2,4-Trichlorobenzene	.12	U	Pyrene	.12	U
Naphthalene	.12	U	Retene	.12	U
4-Chloroaniline	.12	U	Butylbenzylphthalate	.12	U
Hexachlorobutadiene	.12	U	Benzo(a)anthracene	.12	U
4-Chloro-3-Methylphenol	.12	U	3,3'-Dichlorobenzidine	.25	U
2-Methylnaphthalene	.12	U	Chrysene	.12	U
1-Methylnaphthalene	.12	U	Bis(2-Ethylhexyl) Phthalate	.12	U
Hexachlorocyclopentadiene	.12	U	Di-N-Octyl Phthalate	.12	U
2,4,6-Trichlorophenol	.12	U	Benzo(b)fluoranthene	.12	U
2,4,5-Trichlorophenol	.12	U	Benzo(k)fluoranthene	.12	U
2-Chloronaphthalene	.12	U	Benzo(a)pyrene	.12	U
2-Nitroaniline	.12	U	3B-Coprostanol	.25	U
Dimethylphthalate	.12	U	Indeno(1,2,3-cd)pyrene	.12	U
2,6-Dinitrotoluene	.12	U	Dibenzo(a,h)anthracene	.12	U
Acenaphthylene	.12	U	Benzo(ghi)perylene	.12	U
3-Nitroaniline	.12	U			

Authorized By:



Release Date:

2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8270

Field ID: HL-5

Date Prepared: 01/27/99

Matrix: Water

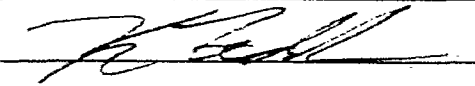
Project Officer: Pam Marti

Date Analyzed: 01/27/99

Units: ug/L

#### Surrogate Recoveries

2-Fluorophenol	39	%
D5-Phenol	22	%
D4-2-Chlorophenol	80	%
1,2-Dichlorobenzene-D4	66	%
D5-Nitrobenzene	88	%
2-Fluorobiphenyl	73	%
Pyrene-D10	119	%
Terphenyl-D14	114	%

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8270

Field ID: HL-5

Date Prepared: 01/27/99

Matrix: Water


Project Officer: Pam Marti

Date Analyzed: 01/27/99

Units: ug/L

#### *Tentatively Identified Compounds*

CAS Number	Analyte Description	Result	Qualifier
127184	Tetrachloroethene	1.5	NJ

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9027B1

Method: SW8270

QC Type: Laboratory Method Blank

Date Prepared: 01/27/99

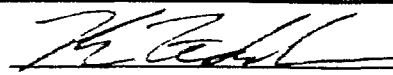
Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/27/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
N-Nitrosodimethylamine	.8	U	Acenaphthene	.4	U
Pyridine	.4	U	2,4-Dinitrophenol	.8	U
Aniline	.4	U	4-Nitrophenol	.4	U
Phenol	.4	U	Dibenzofuran	.4	U
Bis(2-Chloroethyl)Ether	.4	U	2,4-Dinitrotoluene	.4	U
2-Chlorophenol	.4	U	Diethylphthalate	.13	J
1,3-Dichlorobenzene	.4	U	Fluorene	.4	U
1,4-Dichlorobenzene	.4	U	4-Chlorophenyl-Phenylether	.4	U
1,2-Dichlorobenzene	.4	U	4-Nitroaniline	.4	U
Benzyl Alcohol	.4	U	4,6-Dinitro-2-Methylphenol	.4	U
2-Methylphenol	.4	U	N-Nitrosodiphenylamine	.4	U
2,2'-Oxybis[1-chloropropane]	.4	U	1,2-Diphenylhydrazine	.4	U
N-Nitroso-Di-N-Propylamine	.4	U	4-Bromophenyl-Phenylether	.4	U
4-Methylphenol	.4	U	Hexachlorobenzene	.4	U
Hexachloroethane	.4	U	Pentachlorophenol	.8	U
Nitrobenzene	.4	U	Phenanthrene	.0043	J
Isophorone	.4	U	Anthracene	.4	U
2-Nitrophenol	.4	U	Caffeine	.4	U
2,4-Dimethylphenol	.4	U	Carbazole	.4	U
Bis(2-Chloroethoxy)Methane	.4	U	Di-N-Butylphthalate	.044	J
Benzoic Acid		REJ	Fluoranthene	.4	U
2,4-Dichlorophenol	.4	U	Benidine	.8	U
1,2,4-Trichlorobenzene	.4	U	Pyrene	.4	U
Naphthalene	.4	U	Retene	.4	U
4-Chloroaniline	.4	U	Butylbenzylphthalate	.022	J
Hexachlorobutadiene	.4	U	Benzo(a)anthracene	.4	U
4-Chloro-3-Methylphenol	.4	U	3,3'-Dichlorobenzidine	.8	U
2-Methylnaphthalene	.4	U	Chrysene	.4	U
1-Methylnaphthalene	.4	U	Bis(2-Ethylhexyl) Phthalate	.044	J
Hexachlorocyclopentadiene	.4	U	Di-N-Octyl Phthalate	.4	U
2,4,6-Trichlorophenol	.4	U	Benzo(b)fluoranthene	.4	U
2,4,5-Trichlorophenol	.4	U	Benzo(k)fluoranthene	.4	U
2-Chloronaphthalene	.4	U	Benzo(a)pyrene	.4	U
2-Nitroaniline	.4	U	3B-Coprostanol	.8	U
Dimethylphthalate	.4	U	Indeno(1,2,3-cd)pyrene	.4	U
2,6-Dinitrotoluene	.4	U	Dibenzo(a,h)anthracene	.4	U
Acenaphthylene	.4	U	Benzo(ghi)perylene	.4	U
3-Nitroaniline	.4	U			

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9027B1

Method: SW8270

QC Type: Laboratory Method Blank

Date Prepared: 01/27/99

Matrix: Water

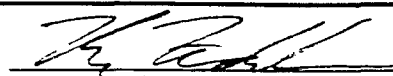
Project Officer: Pam Marti

Date Analyzed: 01/27/99

Units: ug/L

#### Surrogate Recoveries

2-Fluorophenol	66	%
D5-Phenol	51	%
D4-2-Chlorophenol	82	%
1,2-Dichlorobenzene-D4	63	%
D5-Nitrobenzene	83	%
2-Fluorobiphenyl	76	%
Pyrene-D10	110	%
Terphenyl-D14	111	%

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

**Project Name:** Hamilton Labree Rds. - 04

**LIMS Project ID:** 1096-99

**Lab ID:** OBW9027B2

**Method:** SW8270

**QC Type:** Laboratory Method Blank

**Date Prepared:** 01/27/99

**Matrix:** Water

**Project Officer:** Pam Marti

**Date Analyzed:** 01/27/99

**Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
N-Nitrosodimethylamine	.8	U	Acenaphthene	.4	U
Pyridine	.4	U	2,4-Dinitrophenol	8	U
Aniline	.4	U	4-Nitrophenol	.4	U
Phenol	.4	U	Dibenzofuran	.4	U
Bis(2-Chloroethyl)Ether	.4	U	2,4-Dinitrotoluene	.4	U
2-Chlorophenol	.4	U	Diethylphthalate	.15	J
1,3-Dichlorobenzene	.4	U	Fluorene	.4	U
1,4-Dichlorobenzene	.4	U	4-Chlorophenyl-Phenylether	.4	U
1,2-Dichlorobenzene	.4	U	4-Nitroaniline	.4	U
Benzyl Alcohol	.4	U	4,6-Dinitro-2-Methylphenol	.4	U
2-Methylphenol	.4	U	N-Nitrosodiphenylamine	.4	U
2,2'-Oxybis[1-chloropropane]	.4	U	1,2-Diphenylhydrazine	.4	U
N-Nitroso-Di-N-Propylamine	.4	U	4-Bromophenyl-Phenylether	.4	U
4-Methylphenol	.4	U	Hexachlorobenzene	.4	U
Hexachloroethane	.4	U	Pentachlorophenol	.8	U
Nitrobenzene	.4	U	Phenanthrene	.4	U
Isophorone	.4	U	Anthracene	.4	U
2-Nitrophenol	.4	U	Caffeine	.4	U
2,4-Dimethylphenol	.4	U	Carbazole	.4	U
Bis(2-Chloroethoxy)Methane	.4	U	Di-N-Butylphthalate	.056	J
Benzoic Acid	16	U	Fluoranthene	.4	U
2,4-Dichlorophenol	.4	U	Benzidine	.8	U
1,2,4-Trichlorobenzene	.4	U	Pyrene	.4	U
Naphthalene	.4	U	Retene	.4	U
4-Chloroaniline	.4	U	Butylbenzylphthalate	.025	J
Hexachlorobutadiene	.4	U	Benzo(a)anthracene	.4	U
4-Chloro-3-Methylphenol	.4	U	3,3'-Dichlorobenzidine	.8	U
2-Methylnaphthalene	.4	U	Chrysene	.4	U
1-Methylnaphthalene	.4	U	Bis(2-Ethylhexyl) Phthalate	.044	J
Hexachlorocyclopentadiene	.4	U	Di-N-Octyl Phthalate	.4	U
2,4,6-Trichlorophenol	.4	U	Benzo(b)fluoranthene	.4	U
2,4,5-Trichlorophenol	.4	U	Benzo(k)fluoranthene	.4	U
2-Chloronaphthalene	.4	U	Benzo(a)pyrene	.4	U
2-Nitroaniline	.4	U	3B-Coprostanol	.8	U
Dimethylphthalate	.4	U	Indeno(1,2,3-cd)pyrene	.4	U
2,6-Dinitrotoluene	.4	U	Dibenzo(a,h)anthracene	.4	U
Acenaphthylene	.4	U	Benzo(ghi)perylene	.4	U
3-Nitroaniline	.4	U			

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Base/Neutral/Acids

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9027B2

QC Type: Laboratory Method Blank

Project Officer: Pam Marti

Date Prepared: 01/27/99

Date Analyzed: 01/27/99

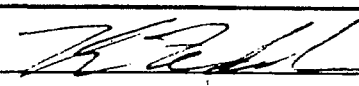
Method: SW8270

Matrix: Water

Units: ug/L

#### Surrogate Recoveries

2-Fluorophenol	67	%
D5-Phenol	51	%
D4-2-Chlorophenol	82	%
1,2-Dichlorobenzene-D4	66	%
D5-Nitrobenzene	85	%
2-Fluorobiphenyl	78	%
Pyrene-D10	115	%
Terphenyl-D14	111	%

Authorized By: 

Release Date: 2/5/99

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# Manchester Environmental Laboratory

7411 Beach Dr E, Port Orchard Washington 98366


## CASE NARRATIVE

February 4, 1998

Subject: Hamilton/Labree Rds. Project

Sample(s): 99048005

Officer(s): Pam Marti

By: Bob Carrell   
Organics Analysis Unit

## ACID HERBICIDE ANALYSIS

### ANALYTICAL METHOD(S): (Draft EPA Method 8085)

The water sample for acid herbicides was extracted following Manchester Laboratory's standard operating procedure for the extraction of herbicides. The herbicide samples were hydrolyzed at pH > 12, extracted with methylene chloride at pH < 2, solvent exchanged and derivatized along with two method blanks. These extracts were analyzed by capillary Gas Chromatography and Atomic Emission Detection (GC/AED). Confirmation of herbicides is performed by Gas Chromatography and Ion-Trap mass spectrometry (GC/ITD) or comparisons of elemental ratios of hetero-atoms to empirical formulas.

The method utilizes compound independent calibration (CIC) for quantitation of detected compounds. A calibration validation is performed each time CIC is used for target compounds. This is done by comparison of CIC to a single point calibration (SPC) of the target analyte being quantitated.

All analytes have a respective practical quantitation limit (PQL) that is higher than the corresponding method detection limit (MDL). If a target analyte is detected and its identification is unambiguously confirmed at a concentration below its PQL, the reported concentration is qualified as an estimate, 'J' qualifier.

### BLANKS:

No target compounds were detected in the laboratory blanks, thus demonstrating that the system was free from contamination.

### HOLDING TIMES:

All samples were extracted and analyzed within the method holding times.



## SURROGATES:

The 2,4,6-tribromophenol and 2,4-dichlorophenylacetic acid surrogate recoveries were acceptable, ranging from 88% to 96% and 45% to 72% respectively.

## MATRIX SPIKING:

Not applicable.

## COMMENTS:

One non-target chlorinated compound, tentatively identified by GC/ITD as 2-propanol, 1,3-dichloro-, phosphate (3:1), was observed in the sample. This compound is used as a flame retardant (formerly used in children's sleepware) and was found to have an estimated quantity of 0.26 ug/L.

The target analytes picloram and dinoseb received the 'UJ' qualifier because we traditionally experience highly variable recoveries for these compounds.

The data is useable as qualified.

## DATA QUALIFIER CODES

U	-	The analyte was not detected at or above the reported result.
J	-	The analyte was positively identified. The associated numerical result is an <u>estimate</u> .
UJ	-	The analyte was not detected at or above the reported estimated result.
REJ	-	The data are <u>unusable</u> for all purposes.
NAF	-	Not analyzed for.
N	-	For organic analytes there is evidence the analyte is present in this sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
NC	-	Not Calculated
E	-	This qualifier is used when the concentration of the associated value exceeds the known calibration range.

# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for Chlorophenoxy Herbicides

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8085

Field ID: HL-5

Date Prepared: 01/27/99

Matrix: Water

Project Officer: Pam Marti

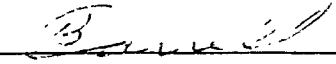
Date Analyzed: 01/29/99

Units: ug/L

Analyte	Result	Qualifier
2,4,6-Trichlorophenol	0.012	U
3,5-Dichlorobenzoic Acid	0.020	U
4-Nitrophenol	0.035	U
2,4,5-Trichlorophenol	0.012	U
Dicamba I	0.020	U
2,3,4,6-Tetrachlorophenol	0.011	U
MCPP (Mecoprop)	0.040	U
MCPA	0.040	U
Dichlorprop	0.022	U
Bromoxynil	0.020	U
2,4-D	0.020	U
2,3,4,5-Tetrachlorophenol	0.011	U
Trichlopyr	0.017	U
Pentachlorophenol	0.010	U
2,4,5-TP (Silvex)	0.016	U
2,4,5-T	0.016	U
2,4-DB	0.024	U
Dinoseb	0.030	UJ
Bentazon	0.030	U
Fluxynil	0.020	U
Picloram	0.020	UJ
Dacthal (DCPA)	0.016	U
2,4,5-TB	0.018	U
Acifluorfen (Blazer)	0.079	U
Diclofop-Methyl	0.030	U

#### Surrogate Recoveries

2,4,6-Tribromophenol	96	%
2,4-Dichlorophenylacetic acid	72	%

Authorized By: 

Release Date: 2-4-99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Chlorophenoxy Herbicides

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9027A1H

QC Type: Laboratory Method Blank

Project Officer: Pam Marti

Date Prepared: 01/27/99

Date Analyzed: 01/29/99

Method: SW8085

Matrix: Water

Units: ug/L

Analyte	Result	Qualifier
2,4,6-Trichlorophenol	0.013	U
3,5-Dichlorobenzoic Acid	0.021	U
4-Nitrophenol	0.036	U
2,4,5-Trichlorophenol	0.013	U
Dicamba I	0.021	U
2,3,4,6-Tetrachlorophenol	0.012	U
MCCP (Mecoprop)	0.042	U
MCPA	0.042	U
Dichloroprop	0.023	U
Bromoxynil	0.021	U
2,4-D	0.021	U
2,3,4,5-Tetrachlorophenol	0.012	U
Trichlopyr	0.018	U
Pentachlorophenol	0.010	U
2,4,5-TP (Silvex)	0.017	U
2,4,5-T	0.017	U
2,4-DB	0.025	U
Dinoseb	0.031	UJ
Bentazon	0.031	U
Ioxynil	0.021	U
Picloram	0.021	UJ
Dacthal (DCPA)	0.017	U
2,4,5-TB	0.019	U
Acifluorfen (Blazer)	0.083	U
Diclofop-Methyl	0.031	U

#### Surrogate Recoveries

2,4,6-Tribromophenol	90	%
2,4-Dichlorophenylacetic acid	45	%

Authorized By: Pam Marti

Release Date: 2-4-99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for Chlorophenoxy Herbicides

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9027A2H

Method: SW8085

QC Type: Laboratory Method Blank

Date Prepared: 01/27/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 01/29/99

Units: ug/L

Analyte	Result	Qualifier
2,4,6-Trichlorophenol	0.013	U
2,5-Dichlorobenzoic Acid	0.021	U
2-Nitrophenol	0.036	U
2,4,5-Trichlorophenol	0.013	U
Dicamba I	0.021	U
2,3,4,6-Tetrachlorophenol	0.012	U
MCPP (Mecoprop)	0.042	U
MCPA	0.042	U
Dichloroprop	0.023	U
Bromoxynil	0.021	U
2,4-D	0.021	U
2,3,4,5-Tetrachlorophenol	0.012	U
Trichlopyr	0.018	U
Pentachlorophenol	0.010	U
2,4,5-TP (Silvex)	0.017	U
2,4,5-T	0.017	U
2,4-DB	0.025	U
Dinoseb	0.031	UJ
Bentazon	0.031	U
oxylnil	0.021	U
Picloram	0.021	UJ
Dacthal (DCPA)	0.017	U
2,4,5-TB	0.019	U
Acifluorfen (Blazer)	0.083	U
Diclofop-Methyl	0.031	U

#### Surrogate Recoveries

2,4,6-Tribromophenol	88	%
2,4-Dichlorophenylacetic acid	51	%

Authorized By: B. Smith

Release Date: 2-4-99

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# **Manchester Environmental Laboratory**

7411 Beach Dr E, Port Orchard Washington 98366

## **CASE NARRATIVE**

**February 10, 1999**

**Subject:** Hamilton Labree Rds Project: Water Sample

**Samples:** 99048005

**Officer(s):** Pam Marti

**By:** Norman Olson *NO*  
Organics Analysis Unit

### ***Hetero-atom Containing Compound Screen*** **(AED SCREEN)**

#### **ANALYTICAL METHOD(S):**

The water sample was extracted following Manchester Laboratory's standard operating procedure for the extraction of pesticides from water. The sample was extracted with methylene chloride followed by solvent exchange to iso-octane. The analytical method used was proposed EPA SW-846 Method 8085. The extract was analyzed using capillary gas chromatography and atomic emission detection (GC/AED) to screen the samples for hetero-atom containing compounds. A gas chromatography and ion trap mass spectrometry (GC/MS) system was used to obtain identification and/or confirmation for such detected compounds if warranted.

With this procedure, Method 8085 in screening mode, all organic compounds with the following characteristics would have been detected if present in the sample.

1. Contains one or more of the hetero-atoms: Cl, Br, I, N, S or P
2. Is semi-volatile, extractable and chromatographical
3. Is at sufficient concentration (low to high ppt range)

This analytical method used for the water sample was limited to a minimal level of quality assurance for quantitation. All compounds reported present have been unambiguously confirmed to be present, and the associated quantitation is qualified as estimated. Furthermore, all target analytes reported as not detected have practical quantitation limits (PQLs) that are qualified 'UJ' as estimates.

#### **BLANKS:**

None of the target compounds were detected in the method blanks. Hence, the method blanks demonstrate the system was free from contamination.

#### **SURROGATE(S):**

Recoveries were acceptable.

**COMMENTS:**

No hetero-atom containing compounds were detected in the sample.

The data is useable as qualified.

***DATA QUALIFIER CODES***

- U     -     The analyte was not detected at or above the reported result.
- J     -     The analyte was positively identified. The associated numerical result is an estimate.
- UJ    -     The analyte was not detected at or above the reported estimated result.
- N     -     For organic analytes there is evidence the analyte is present in this sample.
- NJ    -     There is evidence that the analyte is present. The associated numerical result is an estimate.

# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Chlorinated Pesticides (GC/AED)

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8085

Field ID: HL-5

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier			
Alpha-BHC	0.010	UJ	Surrogate Recoveries		
Beta-BHC	0.010	UJ			
Gamma-BHC (Lindane)	0.010	UJ	4,4-Dibromooctafluorobiphenyl	74	%
Delta-BHC	0.010	UJ	Decachlorobiphenyl	101	%
Heptachlor	0.010	UJ			
Aldrin	0.010	UJ			
Heptachlor Epoxide	0.010	UJ			
Trans-Chlordane (Gamma)	0.010	UJ			
Endosulfan I	0.010	UJ			
Dieldrin	0.010	UJ			
4,4'-DDE	0.010	UJ			
Endrin	0.010	UJ			
Endosulfan II	0.010	UJ			
4,4'-DDD	0.010	UJ			
Endrin Aldehyde	0.010	UJ			
Endosulfan Sulfate	0.010	UJ			
4,4'-DDT	0.010	UJ			
Endrin Ketone	0.010	UJ			
Methoxychlor	0.010	UJ			
Alpha-Chlordene	0.010	UJ			
Gamma-Chlordene	0.010	UJ			
Oxychlordane	0.010	UJ			
DDMU	0.010	UJ			
Cis-Chlordane (Alpha-Chlordane)	0.010	UJ			
Cis-Nonachlor	0.010	UJ			
Kelthane	0.040	UJ			
Captan	0.027	UJ			
2,4'-DDE	0.010	UJ			
Trans-Nonachlor	0.010	UJ			
2,4'-DDD	0.010	UJ			
2,4'-DDT	0.010	UJ			
Captafol	0.050	UJ			
Mirex	0.010	UJ			
Toxaphene	0.30	UJ			
Hexachlorobenzene	0.010	UJ			
Pentachloroanisole	0.010	UJ			
PCB - 1254	0.063	UJ			
PCB - 1260	0.063	UJ			

Authorized By: \_\_\_\_\_

Release Date: \_\_\_\_\_

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Chlorinated Pesticides (GC/AED)

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9028B1

Method: SW8085

QC Type: Laboratory Method Blank

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier			
Alpha-BHC	0.010	UJ	Surrogate Recoveries		
Beta-BHC	0.010	UJ			
Gamma-BHC (Lindane)	0.010	UJ	4,4-Dibromooctafluorobiphenyl	84	%
Delta-BHC	0.010	UJ	Decachlorobiphenyl	106	%
Heptachlor	0.010	UJ			
Aldrin	0.010	UJ			
Heptachlor Epoxide	0.010	UJ			
Trans-Chlordane (Gamma)	0.010	UJ			
Endosulfan I	0.010	UJ			
Dieldrin	0.010	UJ			
4,4'-DDE	0.010	UJ			
Endrin	0.010	UJ			
Endosulfan II	0.010	UJ			
4,4'-DDD	0.010	UJ			
Endrin Aldehyde	0.010	UJ			
Endosulfan Sulfate	0.010	UJ			
4,4'-DDT	0.010	UJ			
Endrin Ketone	0.010	UJ			
Methoxychlor	0.010	UJ			
Alpha-Chlordene	0.010	UJ			
Gamma-Chlordene	0.010	UJ			
Oxychlordane	0.010	UJ			
DDMU	0.010	UJ			
Cis-Chlordane (Alpha-Chlordane)	0.010	UJ			
Cis-Nonachlor	0.010	UJ			
Kelthane	0.040	UJ			
Captan	0.027	UJ			
2,4'-DDE	0.010	UJ			
Trans-Nonachlor	0.010	UJ			
2,4'-DDD	0.010	UJ			
2,4'-DDT	0.010	UJ			
Captafol	0.050	UJ			
Mirex	0.010	UJ			
Toxaphene	0.30	UJ			
Hexachlorobenzene	0.010	UJ			
Pentachloroanisole	0.010	UJ			
PCB - 1254	0.063	UJ			
PCB - 1260	0.063	UJ			

Authorized By: \_\_\_\_\_

Release Date: \_\_\_\_\_

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Organophosphorous Pesticides (GC/AED)

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8085

Field ID: HL-5

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier			
Demeton-O	0.014	UJ	Surrogate Recoveries		
Sulfotepp	0.012	UJ			
Demeton-S	0.014	UJ			
Fonofos	0.012	UJ			
Disulfoton (Di-Syston)	0.012	UJ			
Methyl Chlorpyrifos	0.016	UJ			
Fenitrothion	0.014	UJ			
Malathion	0.016	UJ			
Chlorpyrifos	0.016	UJ			
Merphos (1 & 2)	0.024	UJ			
Ethion	0.014	UJ			
Carbophenothion	0.020	UJ			
EPN	0.020	UJ			
Azinphos Ethyl	0.032	UJ			
Ethoprop	0.016	UJ			
Phorate	0.014	UJ			
Dimethoate	0.016	UJ			
Diazinon	0.016	UJ			
Methyl Parathion	0.014	UJ			
Ronnel	0.014	UJ			
Fenthion	0.014	UJ			
Parathion	0.016	UJ			
Fensulfothion	0.020	UJ			
Bolstar (Sulprofos)	0.014	UJ			
Imidan	0.022	UJ			
Azinphos (Guthion)	0.032	UJ			
Coumaphos	0.024	UJ			
Dichlorvos (DDVP)	0.016	UJ			
Mevinphos	0.020	UJ			
Dioxathion	0.034	UJ			
Propetamphos	0.040	UJ			
Methyl Paraoxon	0.036	UJ			
Phosphamidan	0.048	UJ			
Tetrachlorvinphos (Gardona)	0.040	UJ			
Fenamiphos	0.030	UJ			
Tribufos (DEF)	0.028	UJ			
Abate (Temephos)	0.12	UJ			

Authorized By: \_\_\_\_\_

Release Date: \_\_\_\_\_

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Organophosphorous Pesticides (GC/AED)

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9028B1

Method: SW8085

QC Type: Laboratory Method Blank

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier
---------	--------	-----------

Demeton-O	0.014	UJ
Sulfotepp	0.012	UJ
Demeton-S	0.014	UJ
Fonofos	0.012	UJ
Disulfoton (Di-Syston)	0.012	UJ
Methyl Chlorpyrifos	0.016	UJ
Fenitrothion	0.014	UJ
Malathion	0.016	UJ
Chlorpyrifos	0.016	UJ
Merphos (1 & 2)	0.024	UJ
Ethion	0.014	UJ
Carbophenothion	0.020	UJ
EPN	0.020	UJ
Azinphos Ethyl	0.032	UJ
Ethoprop	0.016	UJ
Phorate	0.014	UJ
Dimethoate	0.016	UJ
Diazinon	0.016	UJ
Methyl Parathion	0.014	UJ
Ronnel	0.014	UJ
Fenthion	0.014	UJ
Parathion	0.016	UJ
Fensulfothion	0.020	UJ
Bolstar (Sulprofos)	0.014	UJ
Imidan	0.022	UJ
Azinphos (Guthion)	0.032	UJ
Coumaphos	0.024	UJ
Dichlorvos (DDVP)	0.016	UJ
Mevinphos	0.020	UJ
Dioxathion	0.034	UJ
Propetamphos	0.040	UJ
Methyl Paraoxon	0.036	UJ
Phosphamidan	0.048	UJ
Tetrachlorvinphos (Gardona)	0.040	UJ
Fenamiphos	0.030	UJ
Tribufos (DEF)	0.028	UJ
Abate (Temephos)	0.12	UJ

#### Surrogate Recoveries

Triphenyl Phosphate	119	%
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Authorized By: \_\_\_\_\_

Release Date: \_\_\_\_\_

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for Nitrogen Containing Pesticides

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Sample: 99048005

Date Collected: 01/26/99

Method: SW8085

Field ID: HL-5

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlobenil	0.040	UJ	Fenarimol	0.060	UJ
Tebuthiuron	0.030	UJ	Diuron	0.12	UJ
Propachlor (Ramrod)	0.048	UJ	Di-allate (Avadex)	0.14	UJ
Ethalfuralin (Sonalan)	0.030	UJ	Profluralin	0.048	UJ
Treflan (Trifluralin)	0.030	UJ	Metalaxyl	0.12	UJ
Simazine	0.020	UJ	Cyanazine	0.030	UJ
Atrazine	0.020	UJ			
Pronamide (Kerb)	0.079	UJ	Surrogate Recoveries		
Terbacil	0.060	UJ			
Metribuzin	0.020	UJ	1,3-Dimethyl-2-nitrobenzene	120	%
Alachlor	0.071	UJ			
Prometryn	0.020	UJ			
Bromacil	0.079	UJ			
Metolachlor	0.079	UJ			
Diphenamid	0.060	UJ			
Pendimethalin	0.030	UJ			
Napropamide	0.060	UJ			
Oxyfluorfen	0.079	UJ			
Norflurazon	0.040	UJ			
Eptam	0.040	UJ			
Butylate	0.040	UJ			
Vernolate	0.040	UJ			
Cycloate	0.040	UJ			
Benefin	0.030	UJ			
Prometon (Pramitol 5p)	0.020	UJ			
Propazine	0.020	UJ			
Chlorothalonil (Daconil)	0.048	UJ			
Triallate	0.060	UJ			
Ametryn	0.020	UJ			
Terbutryn (Igran)	0.020	UJ			
Hexazinone	0.030	UJ			
Pebulate	0.040	UJ			
Molinate	0.040	UJ			
Chlorpropham	0.079	UJ			
Atraton	0.030	UJ			
Triadimefon	0.052	UJ			
MGK264	0.16	UJ			
Butachlor	0.12	UJ			

Authorized By: \_\_\_\_\_

Release Date: \_\_\_\_\_

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Nitrogen Containing Pesticides

Project Name: Hamilton Free Rds. - 04

LIMS Project ID: 1096-99

Lab ID: OBW9028B1

Method: SW8085

QC Type: Laboratory Method Blank

Date Prepared: 01/28/99

Matrix: Water

Project Officer: Pam Marti

Date Analyzed: 02/05/99

Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlobenil	0.040	UJ	Fenarimol	0.060	UJ
Tebuthiuron	0.030	UJ	Diuron	0.12	UJ
Propachlor (Ramrod)	0.048	UJ	Di-allate (Avadex)	0.14	UJ
Ethalfuralin (Sonalan)	0.030	UJ	Profluralin	0.048	UJ
Treflan (Trifluralin)	0.030	UJ	Metalaxyl	0.12	UJ
Simazine	0.020	UJ	Cyanazine	0.030	UJ
Atrazine	0.020	UJ			
Pronamide (Kerb)	0.079	UJ	Surrogate Recoveries		
Terbacil	0.060	UJ			
Metribuzin	0.020	UJ	1,3-Dimethyl-2-nitrobenzene	190	%
Alachlor	0.071	UJ			
Prometryn	0.020	UJ			
Bromacil	0.079	UJ			
Metolachlor	0.079	UJ			
Diphenamid	0.060	UJ			
Pendimethalin	0.030	UJ			
Napropamide	0.060	UJ			
Oxyfluorfen	0.079	UJ			
Norflurazon	0.040	UJ			
Eptam	0.040	UJ			
Butylate	0.040	UJ			
Vernolate	0.040	UJ			
Cycloate	0.040	UJ			
Benefin	0.030	UJ			
Prometon (Pramitol 5p)	0.020	UJ			
Propazine	0.020	UJ			
Chlorothalonil (Daconil)	0.048	UJ			
Triallate	0.060	UJ			
Ametryn	0.020	UJ			
Terbutryn (Igran)	0.020	UJ			
Hexazinone	0.030	UJ			
Pebulate	0.030	UJ			
Molinate	0.030	UJ			
Chlorpropham	0.079	UJ			
Atraton	0.030	UJ			
Triadimefon	0.052	UJ			
MGK264	0.16	UJ			
Butachlor	0.12	UJ			

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Release Date: \_\_\_\_\_

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Washington Department of Ecology  
Manchester Environmental Laboratory  
7411 Beach Drive East  
Port Orchard, WA 98366

February 10, 1999

TO: Pam Marti

FROM: Jim Ross, Manchester Lab

SUBJECT: Quality Assurance memo for the Hamilton Labree (Wk 4) project

#### **SUMMARY**

Data for this project met all quality assurance and quality control criteria with no qualification necessary. The GFAA is not operating properly, so data for Pb, As, Se and Tl is not available at this time. These analytes were not detected at ICP levels (20-50 ug/L)

#### **SAMPLE RECEIPT**

The samples were received by the Manchester Laboratory on 01/27/99

#### **HOLDING TIMES**

All analyses were performed within the specified holding time.

#### **INSTRUMENT CALIBRATION**

Instrument calibration was performed before each analytical run and checked by initial calibration verification standards and blanks. The AA calibration curves returned a correlation coefficient of 0.995 or better. Continuing calibration standards and blanks were analyzed at a frequency of 10% during the run and again at the end of the analytical run. All initial and continuing calibration verification standards and blanks were within the relevant control limits.

#### **PROCEDURAL BLANKS**

The procedural blanks associated with these samples showed no significant level of analytes.

#### **SPIKED SAMPLE ANALYSES**

All spike and duplicate spike recoveries met the acceptance criteria (75-125%)

#### **PRECISION DATA**

Precision estimates based on duplicate spike analysis were all within the acceptance criteria for duplicate analysis ( $\pm 20\%$ )

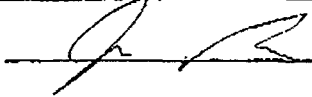
#### **LABORATORY CONTROL SAMPLE (LCS) ANALYSES**

All LCS analyses were within the acceptance criteria for the individual analytes.

Please call Jim Ross at (360) 871-8808 to further discuss this project.

**Manchester Environmental Laboratory****Department of Ecology****Analysis Report for****Inductively Coupled Plasma, Total Recoverable****Project Name:** Hamilton Labree Rds. - 04**LIMS Project ID:** 1096-99**Sample:** 99048005**Date Collected:** 01/26/99**Method:** HPA200.7**Field ID:** HL-5**Date Prepared:** 02/01/99**Matrix:** Water**Project Officer:** Pam Marti**Date Analyzed:** 02/08/99**Units:** ug/L

Analyte	Result	Qualifier
Antimony	30	U
Arsenic	0.4	U
Beryllium	1	U
Cadmium	4	U
Chromium	5	U
Copper	7.3	
Lead	1	U
Nickel	10	U
Selenium	1	U
Silver	3	U
Thallium	0.2	U
Zinc	5.7	

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**Manchester Environmental Laboratory****Department of Ecology****Analysis Report for****Inductively Coupled Plasma, Total Recoverable****Project Name:** Hamilton Labree Rds. - 04**LIMS Project ID:** 1096-99**Sample:** 99048005 (Matrix Spike - LMX2)**Date Collected:** 01/26/99**Method:** EPA200.7**Field ID:** HL-5**Date Prepared:** 02/01/99**Matrix:** Water**Project Officer:** Pam Marti**Date Analyzed:** 02/08/99**Units:** % Recovery

Analyte	Result	Qualifier
Antimony	102	
Arsenic	107	
Beryllium	94	
Cadmium	101	
Chromium	98	
Copper	98	
Lead	107	
Nickel	97	
Selenium	109	
Silver	103	
Thallium	102	
Zinc	98	

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**Manchester Environmental Laboratory****Department of Ecology****Analysis Report for****Inductively Coupled Plasma, Total Recoverable****Project Name:** Hamilton Labree Rds. - 04**LIMS Project ID:** 1096-99**Sample:** 99048005 (Matrix Spike - LMX1) **Date Collected:** 01/26/99 **Method:** EPA200.7**Field ID:** HL-5**Date Prepared:** 02/01/99**Matrix:** Water**Project Officer:** Pam Marti**Date Analyzed:** 02/08/99**Units:** % Recovery

Analyte	Result	Qualifier
Antimony	102	
Arsenic	110	
Beryllium	97	
Cadmium	103	
Chromium	100	
Copper	101	
Lead	108	
Nickel	99	
Selenium	111	
Silver	104	
Thallium	103	
Zinc	100	

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**Manchester Environmental Laboratory****Department of Ecology****Analysis Report for****Inductively Coupled Plasma, Total Recoverable****Project Name:** Hamilton Labree Rds. - 04**LIMS Project ID:** 1096-99**Lab ID:** M9032WB1**Method:** EPA200.7**QC Type:** Laboratory Method Blank**Date Prepared:** 02/01/99**Matrix:** Water**Project Officer:** Pam Marti**Date Analyzed:** 02/08/99**Units:** ug/L

Analyte	Result	Qualifier
Antimony	30	U
Arsenic	0.4	U
Beryllium	1	U
Cadmium	4	U
Chromium	5	U
Copper	5	U
Lead	1	U
Nickel	10	U
Selenium	1	U
Silver	3	U
Thallium	0.2	U
Zinc	5	U

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**Manchester Environmental Laboratory****Department of Ecology****Analysis Report for****Inductively Coupled Plasma, Total Recoverable****Project Name:** Hamilton Labree Rds. - 04**LIMS Project ID:** 1096-99**Lab ID:** M9032WE2**Method:** EPA200.7**QC Type:** Laboratory Control Sample**Date Prepared:** 02/01/99**Matrix:** Water**Project Officer:** Pam Marti**Date Analyzed:** 02/08/99**Units:** ug/L

Analyte	Result	Qualifier
Antimony	101	%
Arsenic	106	%
Beryllium	90	%
Cadmium	99	%
Chromium	97	%
Copper	96	%
Lead	108	%
Nickel	97	%
Selenium	113	%
Silver	103	%
Thallium	103	%
Zinc	96	%

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Mercury

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Pam Marti

Method: EPA245.1

Date Reported: 03-FEB-99

Matrix: Water

Analyte: Mercury

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	0.03	U	ug/L	01/26/99	02/03/99
99048005	Matrix Spike		104 %			01/26/99	02/03/99
99048005	Matrix Spike		99 %			01/26/99	02/03/99
M9033WG			110 %				02/03/99
M9033WH			0.03	U	ug/L		02/03/99

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# Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Alkalinity as Carbonate

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Pam Marti  
Date Reported: 29-JAN-99

Method: EPA310.1  
Matrix: Water  
Analyte: Alkalinity as Carbonate

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	71.7		mg/L	01/26/99	01/29/98
99048005	Duplicate		71.4		mg/L	01/26/99	01/29/98
99048005	Matrix Spike		101 %			01/26/99	01/29/98

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# Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Alkalinity as Bicarbonate

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Tim Marti  
Date Reported: 10-JAN-99

Method: EPA310.2  
Matrix: Water  
Analyte: Alkalinity as Bicarbonate

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	0.0		mg/L	01/26/99	01/29/98
99048005	Duplicate		0.0		mg/L	01/26/99	01/29/98

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Hardness

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Pam Marti  
Date Reported: 10-FEB-99

Method: SM2340B  
Matrix: Water  
Analyte: Hardness

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	118		mg/L	01/26/99	02/08/98
99048005	Duplicate		118		mg/L	01/26/99	02/08/98
M9039HB1			0.2	U	mg/L		02/08/98
M9039HL1			95 %				02/08/98

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Total Dissolved Solids

**Project Name:** Hamilton Labree Rds. - 04

**LIMS Project ID:** 1096-99

**Project Officer:** Pam Marti

**Method:** EPA160.1

**Date Reported:** 01-FEB-99

**Matrix:** Water

**Analyte:** Total Dissolved Solids

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	212		mg/L	01/26/99	01/28/99
99048005	Duplicate		210		mg/L	01/26/99	01/28/99

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**Manchester Environmental Laboratory**  
**Department of Ecology**  
**Analysis Report for**  
**Nitrite/Nitrate**

**Project Name:** Hamilton Labree Rds. - 04

**LIMS Project ID:** 1096-99

**Project Officer:** Pam Marti  
**Date Reported:** 01-FEB-99

**Method:** EPA353.2  
**Matrix:** Water  
**Analyte:** Nitrite-Nitrate

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	2.50		mg/L	01/26/99	01/27/99
99048005	Duplicate		2.51		mg/L	01/26/99	01/27/99
99048005	Matrix Spike		90.2 %			01/26/99	01/27/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Chlorides

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Pam Marti

Method: EPA300.0

Date Reported: 29-JAN-99

Matrix: Water

Analyte: Chloride

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	44.4		mg/L	01/26/99	01/27/99
99048005	Duplicate		43.8		mg/L	01/26/99	01/27/99
99048005	Matrix Spike		95.0	%		01/26/99	01/27/99

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# Manchester Environmental Laboratory

## Department of Ecology

### Analysis Report for

### Sulfate

Project Name: Hamilton Labree Rds. - 04

LIMS Project ID: 1096-99

Project Officer: Pam Marti

Method: EPA300.0

Date Reported: 29-JAN-99

Matrix: Water

Analyte: Sulfate

Sample	QC	Field ID	Result	Qualifier	Units	Collected	Analyzed
99048005		HL-5	0.885		mg/L	01/26/99	01/27/99
99048005	Duplicate		0.905		mg/L	01/26/99	01/27/99
99048005	Matrix Spike		86.1	%		01/26/99	01/27/99

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